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Comparison of the results from the analysis of teaching elementary school students in the field of safety and healthcare in Slovak and Czech Republic

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Abstract

The question of student's safety of elementary schools, during the educational process or above it shakes in every country. The motivation for all interested sides lies in the death statistics of scholar, carfare and other accidents of students. From these reasons state institutions that are interested in inclusion of the questions connected with safety and healthcare of students, try to solve these problems with different means and forms. One of the ways is the implementation of questions connected with safety and healthcare to the educational process of students. This report describes the insertion of education of safety during work and healthcare in the educational process of students of elementary schools in the Slovak and Czech republic and it compares the results.

Keywords:	*Schlüsselwörter:*
education	Bildung
safety and healthcare	Gesundheit and Sicherheit
elementary school	Grundschule

1 Introduction

The question of student safety during their participation in the educational process of schools and academic facilities has been gaining significant traction in society. This fact has been pointed out by various experts that focus on a lifelong education in Occupational Safety and Health (OSH) (Kozík, Feszterová, Bánesz, 2010, Depešová, Tomková, 2013). Based on society's need to educate students in OSH from their early childhood, we have decided to undertake a content analysis of basic documents intended for use in primary schools – more specifically, documents corresponding to the ISCED 1 and 2 levels, i.e. education tools intended for students between the ages of 6 and 15. We analyzed the Framework educational program for the aforementioned academic level in the Slovak Republic from the perspective of its ability to integrate the issue of OSH into students' curriculum. To compare the results of this analysis with other EU countries, we also shine light on the results gleaned from an analysis of the Framework educational program for primary schools in the Czech Republic (CR). To summarize the findings, we offer a brief comparison of the results and state the conclusions that arise from these case studies and their relation to OSH education in Slovakia's primary schools.

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2 Education in Occupational Safety and Hazards in the Slovak Republic

Education in occupational safety and health in Slovakia's primary schools is realized by way of 3 different methods:

- As a general topic, which is included in the school rules.
- As a cross-cutting topic, which is taught as part of a number of subjects' curriculum.
- As an individual topic, which is covered by way of subject designed specifically for this purpose.

Students come into contact with the rules and safety protocol of their school in the introductory lessons at the beginning of each school year. With their signature, students (except for those in their 1st year) confirm that they have understood the school rules, as well as the safety principles of behavior on school grounds.
The country's Framework education plan does not designate an individual school subject designed to teach OSH protocol. The national education program, which has been valid since 2008, introduces cross-cutting topics, which can be taught as part of the curriculum of various school subjects (www.statpedu.sk). One example of this kind of topic in the ISCED 1 is Transport Education Training, which deals with the safety of children in road traffic. The aim of education in road traffic safety in these schools is to gradually prepare children for individual movement in road traffic, both as pedestrians and as cyclists. These lessons take place on school grounds, children traffic parks or in a safe area located close to the school.
Another cross-cutting topic that focuses on safety and occupational safety in the ISCED 1 is Protection of life and health. The protection of a human life and health integrates attitudes, knowledge and skills students need for the protection of life and health in emergency situations, which can come about due to unforeseen events that threaten a person or his/her surroundings. The training targets medical preparation, civil defense, as well as movement and stoppage in nature, with a focus on topography – orientation in the field. This topic is covered by primary schools by way of a two-day scoping exercise. The first day is dedicated to theoretical preparations spanning 5-6 lessons, while the second day includes a practical exercise. This scoping exercise is traditionally organized bi-yearly, i.e. in the fall and spring.
The Framework educational program for the 2nd primary school level, with education conducted in the Slovak language, contains the following educational fields and subjects (ISCED 2): Language and Communication (Slovak language and literature, 1st and 2nd foreign language), Mankind and Nature (Physics, Biology, Chemistry), Mankind and Society (History, Geography, Civics), Mankind and Values (Ethics, Religion), Mathematics and Working with Information (Mathematics, Information Technology), Mankind and the Work-Place (Technology, The Work Place), Arts and Culture (Music, Art, Education through Art), Health and Movement (Physical Education).
Only 3 of the aforementioned topics, in their brief description, deal with OSH – Mankind and nature, Mankind and the work-place, and Health and Movement.
Based on the "Mankind and Nature" field of study, students in the 2nd primary school level are taught to recognize the hazards of everyday life, hazards at home as well as the rules and framework of recommended action in hazardous situations.
The "Mankind and the Work-force" field of study declares that its subject matter is also dedicated to building the students' relationship with technology, as well as teaching its safe use.
The "Health and Movement" field of study gives students the platform to recognize the need for life-long care of their health, an integral part of which is exercise. The field also focuses on basic information related to a healthy lifestyle and movement-based activities.
(http://www.statpedu.sk/files/documents/inovovany_statny_vzdelavaci_program/zs/2_stupen/svp_nsv_6_2_2015.pdf)

The issue of a person's safety can be found in 5 different subjects of lower secondary school levels – Chemistry, Physics, Biology, Technology and Physical Education. The highest amount of focus is placed on safety and protection of health when working in chemical laboratories, which can be seen in legislation related to this area of education. That is why the Ministry of Education, Science, Research and Sport of the Slovak Republic, the State Vocational Institute, as well as the State Pedagogical Institute have prepared a teaching aid for students and teachers in the form of a publication entitled "Safety Guidelines for Working with Chemical Materials for Primary and Secondary Schools – Methodical Material", so as to assist with legislative and technical aspects of academic chemical experiments. This publication should help solve problems related to adhering with new safety measures for work with chemical materials in primary schools. Chemistry, as a school

subject, is primarily intended to enable students to apply theoretical knowledge on materials that are dangerous for people and the environment in day-to-day life.
The curriculum of Physics classes contain to topics related to safety – the rules of safe experimentation , as well as safety when working with electrical equipment.
The curriculum of Biology classes also partly focuses on a persons' safety by including the following topics – basics of pre-medical first aid, infectious diseases, pathogenic microorganisms, incubation periods, prevention, the immune system, immunization, health, healthy lifestyle, daily scheduling, stress, rules of hygiene, intimate hygiene, alcoholism, obesity, eating disorders, smoking, psychoactive substances (legal and illegal drugs), as well as addiction.
The curriculum of Technology classes includes topics related to OSH at the beginning of each academic year – its focuses on the students' work in school workshops during the academic year. The curriculum of this subject includes – safety when working with electrical, gas, gasoline and mechanical equipment, the effects of electrical current on a human organism, as well as first aid after an accident related to electric current. Health protection is also covered with the following topics: basic kitchen equipment, maintaining tidiness and cleanliness, safety and hygiene of a food operation, selection, purchase, storage, food groups, as well as the basics of constructing a menu card).
Physical Education provides basic information related to biological, physical and social basics of a healthy lifestyle. The student is able to develop skills and obtain knowledge, skills and habits that are part of a healthy lifestyle not only during his time attending school, but in his/her adult life as well.
As we found out upon the completion of this analysis, other subjects do not have explicitly stated topics related to OSH in their curriculum.

3 OSH education in the Czech Republic

The chapters of the Framework Education Program for Primary Education dedicated to primary education are divided into nine educational fields, which are made up of one or multiple close school subjects. This includes: Language and Communication (Slovak language and literature, 1st and 2nd foreign language), Mathematics and its Application, Information and Communication Technologies, Mankind and its World, Mankind and Society, Mankind and Nature (Physics, Chemistry, Biology, Geography), Arts and Culture, Mankind and Health (Health Education, Physical Education), Mankind and the Work-Place (Framework Education Program for Primary Education, 2013, p. 15).
The content of the "Mankind and its World" field is divided into 5 various thematic areas. The content of the "Mankind and its World" field was created only for the 1st primary school level, with the 2nd primary school level offering the same subject in 8 various fields. One of these is called "Mankind and Health". In this thematic area, students are offered a closer look at health as a biopsychosocial life balance. Students receive information regarding suitable and unsuitable habits regarding daily scheduling, hygiene, nutrition, etc. Students also receive guidance regarding health and diseases, prevention, as well as first aid. They become increasingly familiar with safe conduct and mutual help in various situations, including emergency circumstances that endanger the health of an individual or group of people. Students gradually come to realize the responsibility that each individual has in taking care of his/her own health and safety, as well the health of others.
The content of the "Mankind and Nature" field is devoted to informing students of the dependence humans have on natural resources, as well as the influence mankind has on the eco-system and the health of others.
When studying the field of "Mankind and Health", students receive information related to steps they can take to positively influence their health (facts, activities, and lifestyle guidance). Education in this field is primarily devoted to having students realize the value of good health and ways to maintain it, as well as the problems that arise from disease or other health-related issues. Students also become familiar with various risks that endanger health in common as well as extraordinary situations, practice skills and lifestyle habits that lead to maintaining or improving their state of health, while also accepting the needed level of responsibility for both their own and other's health.
The question of OSH is covered in 9 different school subjects – "Mankind and its World", "Information and Information Technology", "Physics", "Chemistry", "Biology", "Geography", "Health Education", "Physical Education", as well as "Mankind and the Work-Place".

The basics of safe usage and accident prevention when working with information technology on a long-term basis is covered with the help of the subject "Information and Information Technology". However, this subject is only offered to students in the 1st primary school level.
Physics classes focus on teaching safe habits to students when working with electrical equipment and tools.
Chemistry classes deal with safe habits in school workrooms (laboratories), as well as in daily life. Students become familiar with dangerous chemicals and substances, identifying warning signs and their meaning when dealing with emergency situations, e.g. chemical plant accidents or spillage of dangerous chemicals.
The curriculum of biology classes also covers the causes, symptoms, practical advice and steps that need to be taken in case of common ailments, serious injuries, life-threatening states or epidemics. One topic is devoted to covering lifestyle, as well as the positive and negative influence that a person's surroundings and lifestyle can have on his/her health.
Protecting a person when their health and/or life is threatened is also covered in geography classes – covered with the help of the "Natural Disasters" topic, which goes over measures, actions and steps that need to be taken in case of dangerous natural disasters, and explains this via model situations.

The subject "Health Education" leads students to actively develop and protect their health in all areas (social, mental and physical) and teaches them to be responsible for it. Its curriculum is designed to build upon the topics covered in "Mankind and its World" classes and is connected with other educational fields. Students are taught the basics of a healthy lifestyle and are led to apply them to their own lives, while also being taught the basics of dealing with common and emergency situations that could be dangerous to one's health. This subject is included in the curriculum of the 2nd primary school level.

	Slovak Republic	Czech Republic
Educational Fields	Mankind and Nature Mankind and the Work Force Health and Movement	Mankind and its World Mankind and Nature Mankind and the Work-Force Mankind and Health
School Subjects	Chemistry Physics Biology Technology Physical Education	Mankind and its World Information and Communication Technology Physics Chemistry Biology Geography Health Education Physical Education Mankind and the Work-Force
Cross-cutting topics	Transport Education Training Health and Life Safety	

Table 1: Comparison of the implementation of safety and health protection education for primary schools in the Slovak and Czech Republik

Physical education, as another component in teaching students the complex subject of health, leads students to discover their own abilities and opportunities in terms of movement-based activity, while also allowing them to discover the effect that these activities can have on one's physical ability, as well as their spiritual and social well-being. Education begins with the spontaneous physical activity of students and slowly changes into organized and selected physical activity, the goal of which is to give students the ability to integrate physical activity into their daily lives, so as to meet their own movement-based needs and interests, as well as for the optimal growth of ability and performance, regeneration of strength, compensation for various other resistance, and support of health and life protection. This subject is taught in both the 1st and 2nd primary school level.
To assist in ensuring the safety and protection of health for students in schools, a website entitled "Safety and Health Protection in Schools" was established, which can be found via the following URL: http://skoly.vubp.cz (Hlavičková, Horáčková, 2014).

In the Czech Republic, the issue of technical training is covered with the subject field "Mankind and the World-Place". In the 1st primary school level, the curriculum of this field is divided into four thematic areas: Working with Small Materials, Construction Activities, Gardening and Meal Preparation, all of which are mandatory at this level. In the 2nd primary school level, the curriculum is divided into eight thematic areas: Working with Technology, Design and Construction, Gardening and Animal Care, Operation and Maintenance of a Household, Meal Preparation, Working with Laboratory Technology, Working with Digital Technology, and the Work-Place. Out of the aforementioned areas, only the "Work-Place" area is mandatory for students, with this applying to students in the 8th and 9th grade. All the aforementioned areas consistently lead students to follow certain practices for safety and hygiene in the work-place. It is interesting to note that the Czech Republic does not have a single, agreed upon, name for a subject that offers students technical education. Based on available school education plans, the most common variations of this kind of subject are "Practical Activities" or "Work Education".

4 Conclusion

At first glance, one can see the difference in approaches between the two countries when educating students in OSH. In the Czech Republic, schools approached the subject of OSH education by creating a new subject, Health Education, while the Slovak Republic includes these fields in its cross-cutting topics. In terms of overall time-management and organization, it is more advantageous to create a designated subject to teach the subject matter, as the subject matter can be taught to students in a regular manner alongside other subjects, with the student being educated on a deliberate and regular basis. A cross-cutting topic primarily brings a designed exercise, which is organized on a bi-yearly basis, which cannot be compared with regular weekly intervals of education. However, the results brought about by these approaches might not have much variation in regards to students' results. Results in the field of occupational and safety hazards are primarily affected by the teachers themselves and the approach they take to the students. If teachers in other subjects (primarily those that teach subjects of an applicable nature) sufficiently motivate their students, this motivation, as a dynamic element, is an important aspect of maintaining and expanding the activity of students in the educational process, as well as in the case of maintaining proper hygiene and safe working habits (Feszterová, 2014, s. 33).
It is imperative to continue to devote the necessary attention to the issue of health protection to students as young as those attending primary school, because only by approaching things this way can we secure professional, qualified and active task completion, as well as measures directed at protecting the safety of civilians in their professional and social adult life.

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